

10772913a.txt

6/3,AB/13 (Item 4 from file: 34)

DIALOG(R)File 34: SciSearch(R) Cited Ref Sci

(c) 2007 The Thomson Corp. All rights reserved.

03624548 Genuine Article#: PT886 Number of References: 34

OPTIMIZATION OF METHODS TO ACHIEVE MESSENGER-RNA-MEDIATED TRANSFECTION OF TUMOR-CELLS IN-VITRO AND IN-VIVO EMPLOYING CATIONIC LIPOSOME VECTORS

(Abstract Available)

Author: LU D; BENJAMIN R; KIM M; CONRY RM; CURIEL DT

Corporate Source: UNIV ALABAMA,CTR COMPREHENS CANC,WALLACE TUMOR INST,GENE THERAPY PROGRAM,1824 6TH AVE S,ROOM

620/BIRMINGHAM//AL/35294; UNIV ALABAMA,CTR COMPREHENS CANC,WALLACE TUMOR INST,GENE THERAPY PROGRAM/BIRMINGHAM//AL/35294; UNIV

ALABAMA,DEPT CELL & MOLEC BIOL/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT CELL & MOLEC BIOL/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT PULM & CRIT CARE MED/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT MED/BIRMINGHAM//AL/35294

Journal: CANCER GENE THERAPY , 1994 , V 1 , N4 (DEC) , P 245-252
ISSN: 0929-1903

Language: ENGLISH Document Type: ARTICLE

Abstract: Direct in vivo transfection of tumor nodules in situ via liposome-DNA complexes has been employed as a strategy to accomplish antitumor immunization. To circumvent the potential safety hazards associated with systemic localization of delivered DNA, the utility of mRNA transcript-mediated gene delivery was explored. Capped, polyadenylated mRNA transcripts encoding the firefly luciferase and Escherichia coli lacZ reporter genes were derived by in vitro transcription. Transfection of the human breast cancer cell line MDA-ME-435 in vitro was accomplished employing cationic liposome-mRNA complexes. Evaluation of a panel of cationic liposome preparations demonstrated significant differences in the capacity of the various preparations to accomplish mRNA-mediated transfection. Quantitative evaluation of in vitro transfection demonstrated that target cells could be transfected at a high level of efficiency. The mRNA liposome-complexes were evaluated for in vivo transfection of tumor nodules in human xenografts in athymic nude mice. It could be demonstrated the liposome-mRNA complexes were comparable in efficacy to liposome-DNA complexes in accomplishing in situ tumor transfection. Thus, mRNA may be considered as an alternative to plasmid DNA as a gene transfer vector for genetic immunopotential applications.

Dendritic cells pulsed with RNA are potent antigen-presenting cells in vitro and in vivo

Author: Boczkowski David; Nair Smita K; Snyder David; Gilboa Eli
(Reprint)

Author Address: Dep. Surg., Box 2601, Duke Univ. Med. Cent., Durham, NC 27710, USA**USA

Journal: Journal of Experimental Medicine 184 (2): p 465-472 1996

ISSN: 0022-1007

Document Type: Article
Record Type: Abstract
Language: English

Abstract: Immunization with defined tumor antigens is currently limited to a small number of cancers where candidates for tumor rejection antigens have been identified. In this study we investigated whether pulsing dendritic cells (DC) with tumor-derived RNA is an effective way to induce CTL and tumor immunity. DC pulsed with in vitro synthesized chicken ovalbumin (OVA) RNA were more effective than OVA peptide-pulsed DC in stimulating primary, OVA-specific CTL responses in vitro. DC pulsed with unfractionated RNA (total or polyA+) from OVA-expressing tumor cells were as effective as DC pulsed with OVA peptide at stimulating CTL responses. Induction of OVA-specific CTL was abrogated when polyA+ RNA from OVA-expressing cells was treated with an OVA-specific antisense oligodeoxynucleotide and RNase H, showing that sensitization of DC was indeed mediated by OVA RNA. Mice vaccinated with DC pulsed with RNA from OVA-expressing tumor cells were protected against a challenge with OVA-expressing tumor cells. In the poorly immunogenic, highly metastatic, B16/F10.9 tumor model a dramatic reduction in lung metastases was observed in mice vaccinated with DC pulsed with tumor-derived RNA (total or polyA+, but not polyA-RNA). The finding that RNA transcribed in vitro from cDNA cloned in a bacterial plasmid was highly effective in sensitizing DC shows that amplification of the antigenic content from a small number of tumor cells is feasible, thus expanding the potential use of RNA-pulsed DC-based vaccines for patients bearing very small, possibly microscopic, tumors.

Set	Items	Description
S1	18	(TOTAL (3N) RNA) (S) TUMOR? (S) LIPOSOME?
S2	5	RD (unique items)
S3	1437	LIPOSOME? (3N) RNA
S4	98	S3 (S) (TUMOR? OR CANCER OR CARCINOMA)
S5	34	S4 NOT PY>1998
S6	19	RD (unique items)
S7	838	(TOTAL (2N) TUMOR? (2N)RNA)
S8	837	S7 NOT S1
S9	333	S8 NOT PY>1998
S10	10	S9 (S) TRANSFECT?
S11	4	RD (unique items)
S12	4	S9 (S) PULSED
S13	1	RD (unique items)

Bone marrow-generated dendritic cells pulsed with tumor extracts or tumor

RNA induce antitumor immunity against central nervous system tumors
AUTHOR: Ashley David M; Faiola Brenda; Nair Smita; Hale Laura P;

10772913a.txt

Bigner

Darell D; Giloba Eli (Reprint)

AUTHOR ADDRESS: Duke Univ. Med. Center, Dep. Surgery, Box 2601, Med. Sci.

Res. Build., Room 401, Durham, NC 27710, USA**USA

JOURNAL: Journal of Experimental Medicine 186 (7): p1177-1182 1997

ISSN: 0022-1007

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Recent studies have shown that the brain is not a barrier to successful active immunotherapy that uses gene-modified autologous tumor cell vaccines. In this study, we compared the efficacy of two types of vaccines for the treatment of tumors within the central nervous system (CNS): dendritic cell (DC)-based vaccines pulsed with either tumor extract or tumor RNA, and cytokine gene-modified tumor vaccines. Using the B16/F10 murine melanoma (B16) as a model for CNS tumor, we show that vaccination with bone marrow-generated DCs, pulsed with either B16 cell extract or B16 total RNA, can induce specific cytotoxic T lymphocytes against B16 tumor cells. Both types of DC vaccines were able to protect animals from tumors located in the CNS. DC-based vaccines also led to prolonged survival in mice with tumors placed before the initiation of vaccine therapy. The DC-based vaccines were at least as effective, if not more so, as vaccines containing B16 tumor cells in which the granulocytic macrophage colony-stimulating factor gene had been modified. These data support the use of DC-based vaccines for the treatment of patients with CNS tumors.

9/3,AB/2 (Item 2 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

(c) 2007 The Thomson Corporation. All rts. reserv.

0010551421 BIOSIS NO.: 199699185481

Dendritic cells pulsed with RNA are potent antigen-presenting cells

in

vitro and in vivo

AUTHOR: Boczkowski David; Nair Smita K; Snyder David; Gilboa Eli
(Reprint)

AUTHOR ADDRESS: Dep. Surg., Box 2601, Duke Univ. Med. Cent., Durham,
NC

27710, USA**USA

JOURNAL: Journal of Experimental Medicine 184 (2): p465-472 1996 1996

ISSN: 0022-1007

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Immunization with defined tumor antigens is currently
limited to

a small number of cancers where candidates for tumor rejection
antigens

have been identified. In this study we investigated whether pulsing
dendritic cells (DC) with tumor-derived RNA is an effective way to
induce

CTL and tumor immunity. DC pulsed with in vitro synthesized chicken
ovalbumin (OVA) RNA were more effective than OVA peptide-pulsed DC
in

stimulating primary, OVA-specific CTL responses in vitro. DC pulsed
with

unfractionated RNA (total or polyA+) from OVA-expressing tumor cells
were

as effective as DC pulsed with OVA peptide at stimulating CTL
responses.

Induction of OVA-specific CTL was abrogated when polyA+ RNA from
OVA-expressing cells was treated with an OVA-specific antisense
oligodeoxynucleotide and RNase H, showing that sensitization of DC
was

indeed mediated by OVA RNA. Mice vaccinated with DC pulsed with RNA
from

OVA-expressing tumor cells were protected against a challenge with
OVA-expressing tumor cells. In the poorly immunogenic, highly
metastatic,

B16/F10.9 tumor model a dramatic reduction in lung metastases was
observed in mice vaccinated with DC pulsed with tumor-derived RNA
(total

or polyA+, but not polyA-RNA). The finding that RNA transcribed in
vitro

from cDNA cloned in a bacterial plasmid was highly effective in
sensitizing DC shows that amplification of the antigenic content
from a

small number of tumor cells is feasible, thus expanding the
potential use

of RNA-pulsed DC-based vaccines for patients bearing very small,
possibly
microscopic, tumors.

Set	Items	Description
S1	6	((TOTAL (2N) RNA) (4N) TUMOR) (S) (LIPOSOM?)
S2	2	RD (unique items)
S3	6	((TOTAL (3N) RNA)(4N)(TUMOR OR CANCER OR MELANOMA))
(S) LI-		POSOM?
S4	2	RD (unique items)
S5	0	S2 NOT S4
S6	1835	(RNA (4N)(TUMOR OR MELANOMA OR CANCER)) (S) (VACCIN?
OR I-		MMUNIZ? OR IMMUNE?)
S7	861	S6 NOT PY>1998
S8	571	RD (unique items)
S9	12	S8 (S) (TOTAL (2N) RNA)
S10	559	S8 NOT S9

Ashley et al. J. Exp. Med., 1997, 186(7): 1177 1182).

Such responses were found to be equal to or more efficient than those elicited by peptide pulsed DCs (Boczkowski et al., J. Exp. Med., 1996, 184:465 472

The cationic liposomes used in the following experiments (unless otherwise indicated) consisted of DOTAP (1,2 dioleoyl-3-trimethylammonium-propane) and cholesterol mixed in a 1:1 molar ratio, dried down in round bottom tubes, then rehydrated in 5% dextrose solution (D5W) by heating at 50 °C for 6 hours, as described previously (Solodin et al., 1995, Biochemistry 34:13537-13544, incorporated herein by reference in its entirety).